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June, 68.03° F. As compared with the preceding sixteen years, June of 1886 was a cool month : in but two years, 1879 and 1881, has the mean been so low. The maximum temperature was 84° F. : this was reached on the 10th at 5 P.M., on the 17th at 1 P.M., and on the 29th at 5 P.M. In no year since 1869 has the maximum been so low for the month of June, the lowest being 88° F. in 1881, while it has in thirteen different years since 1869 been in the nineties, and in 1874 was as high as 98° F. The rainfall for the month was 3.35 inches, slightly above the average for sixteen years, which was 3.01 inches : it was less than that of May by 2.05 inches, but greatly in excess of that of June, 1880, which was only 1.32 inches. The number of days on which rain fell was nine.

It is of interest, in connection with the subject of temperature, to compare the maxima as recorded in the cities of New York and Brooklyn. The meteorological observations for the former city are made at Central park at a height of 97 feet above the sea : those for Brooklyn are made at Prospect park, 220 feet above the sea-level. The following table shows the maximum and minimum temperature for each day of the month of June at these two recording-stations, and the mean for the weeks ending June 5, 12, 19, and 26.

1886	Max. temp.		Min. temp.		1886	Max. temp.		Min. temp.	
	N. Y.	Bkln	N. Y.	Bkln		N. Y.	Bkln	N. Y.	Bkln
June 1	78	74	59	53	June 16	81	77	62	60
“ 2	75	69	59	57	“ 17	84	82	71	66
“ 3	71	70	56	62	“ 18	77	82	57	63
“ 4	71	72	52	55	“ 19	75	74	54	57
“ 5	74	72	55	57	“ 20	81	79	57	59
“ 6	78	75	57	57	“ 21	80	78	62	65
“ 7	76	71	61	55	“ 22	73	72	62	60
“ 8	82	79	60	62	“ 23	66	72	62	60
“ 9	78	78	59	61	“ 24	70	69	60	64
“ 10	84	79	59	64	“ 25	82	77	65	61
“ 11	82	80	65	65	“ 26	80	79	64	63
“ 12	80	76	60	64	“ 27	80	79	66	63
“ 13	73	70	63	62	“ 28	76	74	61	62
“ 14	68	64	59	57	“ 29	84	83	63	65
“ 15	73	72	59	57	“ 30	78	77	63	66

Mean for the week ending

June 5.	June 12.	June 19.	June 26.
N. York	B'klyn	N. York	B'klyn
66.5	65.98	68.8	68.86
		67.3	65.98
		68.4	67.19

It will be seen that Brooklyn has, as a rule, a lower temperature than New York. Whether this is due to the difference in elevation of the reading-station, or to some other cause, we do not know. At some future time we hope to be able to give the record of temperature as observed in the hearts of the two cities, which is really the temperature which has a direct bearing upon the public health, rather than that which obtains at such salubrious localities as Central and Prospect parks.

PARIS LETTER.

As the centennial anniversary of the French revolution is to be celebrated here with great display, the government is pushing on with great eagerness all preparations concerning the exhibition of 1889. The plan of the buildings is not yet exactly chosen, but will be soon. It is, however, already decided that a large and very high tower shall be erected in the middle of the exhibition buildings. The Eiffel tower — as it is called, after the name of the man who is to build it — will cost a million of dollars. It is to rest on two legs, which meet and coalesce to form a single tower supported by them. The arch thus formed will be wide and high enough to allow a free and easy passage to the whole of Notre Dame, if this cathedral were to come and ramble about the exhibition. The whole tower will be seven times as high as the *Arc de triomphe*. At present the question is how one shall get up to enjoy the very fine view that will be afforded from the top. An elevator can be used only in the vertical part of the tower : in the two legs, one must devise some other plan, on account of the incline. It is believed that in the first, non-vertical part, a funicular railway will be used ; in the other an elevator will do very well. But, of course, both systems must be very well combined, and every thing possible must be done to insure the safety of the amateurs who wish to ascend the tower. This is not the easiest part of the task of M. Eiffel. The building is to be begun as soon as the necessary funds have been voted by the senate.

A very interesting meeting was recently held at the Academy of inscriptions. Some days after I sent my last latter, it was rumored that M. Maspero, the very modest and able director of the Boulaq museum of Cairo, had found some very antiquated and interesting mummies. These were found, as he wrote to the academy, in a *cachette* of Deir el Bahari, not at all in their tombs : they had been hidden to prevent violation. The mummies were undone in presence of Nubar-Pacha, Sir Drummond Wolff, and the khedive.

It was then easily ascertained, by means of the inscriptions on the cloths surrounding the mummies, that one of them was the body of Ramses II. This is certainly a very interesting fact ; and it is easily believed that to assist at the unveiling of the corpse of a great conqueror, such as Ramses, who died forty centuries ago, causes an emotion of a rare and novel nature. A photograph of the mummy was produced at the meeting of the academy, and created quite a sensation. Although forty centuries have passed over this dead body, the face is in an excellent state of preservation. The

expression is that of a man of high blood, grave, and full of will. The head is rather small; the hair white and rather thin, especially in front. The jaw is very strong: there are no teeth in the mouth. The hands are very elegant, and are yet reddened by the *henné*, which was used for the body's last toilet.

Two other corpses have been found. One was in the sarcophagus containing the remains of Ramses II. The body was not as well preserved. It is believed to be one of the sisters or daughters of Ramses. The other corpse is that of Ramses III. The face is that of an intelligent and refined man, but the expression of power and will is less pronounced. The mouth is very large, and the teeth are all in good order. M. Maspéro intends to have these royal corpses renovated and set in good order: they will then be exposed in the Boulaq museum, where everybody can look and wonder.

Apropos of the recent census of Paris, the full results of which I have not yet seen, some papers have recalled some peculiarities of the last census, taken in 1881. At that time there was one married man of seventeen, one married woman of fourteen, three widowers of eighteen, and two widows of sixteen. Instances of old age were pretty frequent: 6,386 persons were aged over 80 years; 2,747, over 85; 640, over 90; 138, over 95. There were twenty centenarians,—four bachelors, one married man, six widowers, one unmarried woman, one married one, and seven widows. It seems that conjugal life is not very favorable to old age: misanthropes, or rather misogynists, may take a hint, and philosophers may moralize on this statistical fact. Although the full results of the 1886 census are not known, it is certain that the population of Paris has increased by a hundred thousand persons since 1881. Artists of all sorts are very abundantly represented in Paris; the number being 42,626, of whom over 20,000 are women.

A surgeon of Tours, Dr. Thomas, has recently communicated a very interesting fact concerning the surgery of the fingers. A man, while passing over a gate, lost the whole skin of one of his fingers; a ring around one of them having got caught between the gate and an iron bar, and the weight of the man while jumping having forcibly dragged the finger through the ring. The ring and the skin remained an entire hour on the gate. Dr. Thomas secured both, and reintroduced the scalped finger into its normal envelope. Although the whole skin did not adhere, a good part of it was restored to life; and it is possible, that, if the operation could have been performed earlier, the result might have been quite satisfactory.

M. Grancher, professor in the medical school of Paris, and medical assistant of M. Pasteur, especially in anti-rabid inoculations,—Pasteur not being legally qualified for medical practice,—recently gave a very interesting lecture at the Paris exhibition for hygiene, on rabies. He divides the persons who apply to Pasteur for treatment into three classes, —1^o, those who have been bitten by dogs positively rabid, which have communicated rabies to other dogs, or from whose nervous system rabbits have been rendered rabid; 2^o, those bitten by dogs pronounced rabid during life or after death by veterinarians; 3^o, those bitten by dogs of which nothing is known. Putting aside persons bitten recently, and whose fate is yet uncertain, M. Grancher says that the total of persons coming under the three preceding classes is 1,335. As to the first category, according to a very severe and strict statistical review by M. Leblanc, the usual death-rate of persons bitten and not inoculated is 16 per cent. When Pasteur's method is employed, this death-rate is only 1.04 per cent. In the second category, with Pasteur's treatment, it is only 0.46 per cent. No account is taken of the third category, for reasons easily understood. Now, if account is taken only of the persons that have been bitten in the face or on the hands, it is known, on the authority of Brouardel, that the usual death-rate is 80 per cent. With Pasteur's method, the death-rate becomes 1.80 per cent for the first category, and 0.75 per cent for the second. As to wolf rabies, the preventive inoculations seem to exert a very powerful and useful influence. The normal death-rate is 66 per cent; on inoculated persons it is only 14 per cent.

Upon the whole, the more time advances, the more Pasteur's method seems to be a really useful one, and one of which much is to be expected in the future as well as in the present. But this success must also be a very forcible incentive to the study of the manner in which other parasitical diseases may be prevented. Rabies is certainly a very terrible disease; but it must be said, that, although very deadly, it is not an important cause of death. It would be much more useful for mankind to be able to cure tuberculosis, diphtheria, cholera, or the yellow-fever; and it is to be hoped that Pasteur and others will give their attention to the subject. Pasteur's splendid success is well fitted to give an impulse to new studies and researches, and we sincerely hope that it will. Much is done, certainly, by Jenner's and Pasteur's work, but much more remains to be done. The only difference is, that future experimenters are in possession of a method of study which had hitherto been totally wanting. From a theoretical point of view, there is no *a priori* reason against the

possibility of preventing or curing parasitic diseases, such as tuberculosis, cholera, diphtheria, etc.

At the last meeting of the Academy of medicine M. J. Rochard gave some very interesting notes concerning the consumption of alcohol in France. During the last forty years, the annual quantity of alcohol which is used for drink has nearly doubled, but the evil which has resulted therefrom has more than doubled. This is due, according to M. Rochard and others, to the impure quality of many alcoholic drinks or liquors, and to the fact that amylic alcohol is often added to ethylic. It is well known that amylic alcohol is a dangerous and deleterious liquid, and even in small quantities a real poison. Since 1880 the number of *cabarets*, or wine-shops, has become very great: the number is 320,000, and it is calculated that there is one *cabaret* to twenty-five persons. The great abundance of deleterious alcohol may be explained in part by the decrease of production of ordinary wines, due to the ravages of phylloxera. The result is, that a great amount of Spanish or Italian wines of inferior quality are brought into France: as they have no taste, alcohol is added, and almost always amylic alcohol is used. As the senate asked the opinion of the Academy of medicine concerning the question, the academy has answered as follows: First, the addition of alcohol ought to be forbidden; sugar only ought to be added during the fermentation process. Government ought to prevent all introduction into France of alcoholized wines, and prevent the traffic in wines containing over twelve degrees of alcohol: twelve degrees must be the utmost allowed, instead of fifteen as at present. Lastly, the number of *cabarets* ought to be much diminished, and they ought to be very well and frequently inspected. Such is the course proposed by the Academy of medicine. The different conclusions adopted by a special committee will be discussed at the next meeting, and the opinion of the academy will then be sent to the senate. In our next letter we shall let you know the result of this discussion.

In another recent meeting of the same society, M. Andouard of Nantes communicated an interesting note concerning some cases of excellent preservation of dead bodies, notwithstanding exposure. It has long been well known that corpses become mummified in dry sand or earth, or in heated deserts. It may be so in constantly heated rooms; but it has not been ascertained yet that a dead body exposed to open air can also escape decomposition, or rather putrefaction. It is well known, however, that in Toulouse, for instance, dead bodies are very well preserved in open air,

when they have been entombed for a year or two in an hermetically closed vault; that at the great St. Bernard pass in Switzerland the bodies of the travellers killed by avalanches, or frozen during their journey, as well as those of the monks who live in the *refuge* of the pass, are never buried, but simply laid out in small buildings or underground cellars; and they never decompose, on account of the dryness of the air, and the cold which always prevails,—a very singular and interesting sight which travellers ought not to forget to ask for when they cross the pass in summer. But in both of these cases there is a reason for non-decomposition. In the first, corpses become saponified by remaining in dry air; in the second, cold is the agent of preservation.

M. Andouard recently met with a case in which a young girl remained a whole year in the place in which she was murdered. The body, one year after death, was so very well preserved that it was thought that some chemicals or antiseptics had been used. In fact, none had been used; and the preservation of the body—in a cellar—was due to the fact that the temperature was low, that ventilation was very imperfect, hardly possible even, and that the cellar was very dry. In fact, there was in this case a natural combination of the conditions favorable to non-decomposition. The changes in the tissues of the corpse were very curious. The body had lost a great deal of weight. The skin was hard, dry, and rigid. Muscular and vascular tissues underneath had all disappeared: in place of these was found a sort of fibrillar substance, of a spongy nature, made up of dried cellular and conjunctive tissues, and of a sort of dust. This dust was the result of an incalculable amount of dead *acarri* and of their eggs; and the presence of these insects is the reason for the preservation of the body. They absorbed all liquid and putrescible structures. M. Andouard's paper is a very useful one, and it would be very interesting to meet with other similar cases. In fact, the decomposition process of dead bodies, either buried or unburied, is not very well known, and the matter is worth studying.

Professor Mosso of Turin has recently made known, in the *Archives italiennes de biologie*, many interesting results of his experiments on the respiratory function. His conclusions are new, and the facts he has discovered had hitherto escaped observation. First of all, he noticed that there is no regular respiratory rhythm, but that there are some pretty regular irregularities in the way we breathe. During heavy sleep, these irregularities are very noticeable, when Marey's pneumograph is used. There are regular series of deep and strong inspirations, followed or separated by series of

shallow and weak ones ; and in both of these series the diaphragm and thoracic muscles do not take equal parts. When the diaphragm works much, the other muscles take some rest, and reciprocally. When mind and body are quiet, the respiration is less deep and more frequent, and the diaphragm is somewhat lazier than usual. But a more important fact is, that the number and depth of the respiratory movements are not proportioned to the needs of the organism, and the conclusion drawn therefrom is, that we usually breathe more than is necessary, when in ordinary conditions under the sea-level barometric pressure. For instance, on high mountains we breathe less air than on the sea-level, and do not find ourselves any the worse for it. M. Mosso gives many other very interesting conclusions, some of which refer to the Cheym-Stokes respiratory rhythm ; but we cannot give more than the principal facts in this letter. However, we must quote the singular and unexpected conclusion, that there is no unique respiratory centre. This conclusion seems rather difficult to admit, but the matter is worth investigation. Professor Mosso's memoir is a very long one, and cannot be easily reviewed in a short space.

Another interesting paper on the biological sciences is that of Professor Sanson, on 'The comparison of the living organism as an animated motor with the steam-engine.' His conclusion is that the animated motor is more economical than the engine, if it is asked, not which of the two gives most work, but which gives the kilogrammetre at least cost-price. But this conclusion applies only to cases in which a great expenditure of force is not required. For instance, in cases where twenty horses can do as well as a steam-engine, it is more economical to use the horses, and it is all the more so that less energy is required ; but if fifty horses can do the work of a steam-engine, it is better, that is, more economical, to have it done by steam. Professor Sanson's paper has been published in the *Revue scientifique* of June 19, 1886.

An interesting thesis was published some days ago by M. L. Boutan, assistant of Professor de Lacaze-Duthiers. The subject of it is the 'Anatomy and development of *Fissurella*,' a gastropod mollusk. The most important fact is, that in larval development, *Fissurella* passes by two stages which very much remind us of two adult gastropod forms of life : one resembles *Emarginula* ; the other, *Bimula*.

Among the recent publications I will point to the supplementary volume published for 1886 by the *Archives de zoologie expérimentale et générale*. As this scientific periodical is now overcrowded, some contributors conceived the idea of publish-

ing their own memoirs at their own expense, and making a volume identical with the ordinary one ; as is often done by the *Zeitschrift für wissenschaftliche zoologie* when papers are too abundant. This supplementary volume, printed and bound exactly in the same style as the ordinary ones, contains four memoirs. One is by Y. Delage, professor of zoölogy in the Sorbonne, on a *Balaenoptera musculus* found on the Normandy coast. It contains a number of new anatomical facts concerning this animal, and is accompanied by a series of very fine plates. The second memoir relates to the physiology of muscular contraction of invertebrated animals (with thirty-five *graphiques*), by H. de Varigny, D.Sc. The third is by J. Deniker, D.Sc., and is an excellent monograph of a *Gorilla foetus*, from an anatomical point of view. Very little has been known hitherto on that subject. The last one is M. Boutan's memoir, of which we have just spoken. This supplementary volume is a very big one, and contains a great many more engravings and plates than the ordinary ones do. It is to be hoped that the enterprise of the authors will prove successful, and encourage other similar experiments.

V.

Paris, July 10.

NOTES AND NEWS.

PROFESSOR WEICHSELBAUM of Vienna has recently collected the opinions of the leading medical authorities on the causation of pneumonia, and regards the proof of its bacterial origin as abundantly established. He has investigated one hundred and twenty-seven cases, besides having made a large number of experiments, using the material obtained from lungs affected with this inflammation. As a result of his labors, he finds four varieties of micro-organisms in this affection : 1. The *diplococcus pneumoniae*, which occurred in ninety-one of the cases (these are oval, elliptical, or round cocci, and are sometimes in pairs and sometimes form chains) ; 2. *Streptococcus* was found in twenty cases (this microbe resembles the first variety, but is, as a rule, more spherical) ; 3. *Staphylococcus aureus s. albus* was detected only in secondary pneumonia ; 4. *Bacillus pneumoniae*, as its name implies, is rod-shaped (this form was found in nine cases). Whenever other affections co-existed with pneumonia, and appeared to be secondary to it, as in meningitis, pleurisy, or pericarditis, they were determined to be due to these micro-organisms.

— The senate conferees on the naval appropriation bill have receded from their disagreement to the clause making provision for the new observatory buildings. This practically insures the ap-